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XXXIX.—*Notes on Irish Ornithology.* By HENRY SEEBOHM.

I. COUNTY WATERFORD.

THE study of ornithology in England becomes more difficult every year. The wilder districts are in the hands of the gamekeeper, who ruthlessly destroys half the interesting birds, and does his best to prevent the ornithological student from trespassing in search of those he has left. The fertile districts are in the hands of the farmer, who drains the marshes, cuts down the trees, and thus makes the country uninhabitable by the most interesting kinds of birds.

Fortunately this is not the case in Ireland. The opportunities for studying ornithology in Ireland are very great, partly because the number of ornithologists is very small, partly because there is abundance of mountain, rock, and bog that the farmer cannot grapple with, and partly because, with the enforced absenteeism of the landlord, the gamekeeper's occupation is gone. There are consequently many species of birds which have become very rare in England, but which are still fairly common in Ireland.

It would be very difficult to find a locality in England where so many interesting birds could be seen in a few days

as at Cappagh, in county Waterford, where I spent a week at the end of April last, enjoying the hospitality of R. I. Ussher, Esq., the well-known ornithologist of the south-east of Ireland.

Among the commoner birds here may be mentioned the Goatsucker (*Caprimulgus europæus*), the Grasshopper Warbler (*Locustella naevia*), the Ring Ouzel (*Turdus torquatus*), and the Twite (*Linota flavirostris*).

There are very few demesnes in the county of Waterford where the Woodcock (*Scolopax rusticula*) does not regularly breed, and where it may not be constantly seen and heard shortly before dusk flying from its nest to its feeding-grounds. It seems to be the general opinion in the south of Ireland that these breeding birds are migratory, and disappear at least a month before the winter flocks of Woodcock arrive. Unfortunately we have no information respecting the date of their arrival in Brittany, where, according to Degland and Gerbe, they are very common in autumn. On Heligoland the autumn migration does not begin until the end of September, is at its height in the middle of October, and ceases before the end of November.

Siskins (*Chrysomitris spinus*) breed regularly in the south of Ireland, and Mr. Ussher has frequently seen them on his estate, but he has but once succeeded in finding the nest. He has a beautiful nest in his collection, taken in the extreme south of county Wicklow by Mr. Allan Ellison, who has written a most interesting account of the breeding-habits of this species as observed by him in the south of Ireland (Ellison, *Zoologist*, 1887, p. 338), and who sent the nest and eggs, together with both the parent birds, to the British Museum, where they form one of the most interesting cases in the unrivalled collections of these objects which attract so much attention from the visitors to South Kensington.

There are no less than a dozen pairs of Peregrines (*Falco peregrinus*) breeding within an easy day's drive of Cappagh. Fortunately for ornithology (and the Peregrines) these breeding-places are inaccessible to the casual egg-collector. Most of them are on the coast, and the bird can only be

watched on and off her nest from the sea. The cliffs are generally perpendicular, and in many cases overhang, and in all cases can only be reached by a rope. It is not easy to find out which of its several breeding-places the bird has chosen, it is still less easy to find the exact place whence a rope may be let down within access of the cleft or ledge, and it is least easy of all to climb down the rope, or be let down by others. The natives cannot give any assistance; they have an inherited dread of the cliffs, and nothing will induce them to risk their lives over them, either with or without ropes. Mr. Ussher knows every breeding-place of the Peregrines (under no circumstances do they make a nest), and no cliff is too high or too steep for him. He generally gets the first clutch from each eyrie, but he always leaves the second clutch to be hatched out.

If the eyrie of the Peregrine is inaccessible, the nest of the Chough (*Pyrrhocorax graculus*) is still more so. It is generally placed on a ledge or in a chink near the roof of a cave, and is a large, deep, and well-made structure. There are at least a dozen Choughs' nests within drive of Cappagh, but only one of them is accessible without ropes. Although the second clutch is never taken, the number of Choughs is less than it was thirty or forty years ago. It has been suggested that the Jackdaws are the cause of this decrease, whilst the blame has also been laid on the Hooded Crows; but the facts seem to be that the Choughs which built in accessible places have been exterminated by egg-collectors, and that the Choughs of the present generation which breed in almost inaccessible places, suffer greatly in wet seasons by having their nests soaked by water dropping from the roof of the cave in which they are now built.

We saw several pairs of Ravens (*Corvus corax*), but did not succeed in discovering their nests.

The most interesting nests and eggs which we found were those of the Crossbill.

There are few objects more interesting to an ornithologist than the sight of a nest of a rare bird, especially if it be one which is seen by him for the first time; and it was therefore

with very great interest that I learned from Mr. Ussher that four pairs of Crossbills (*Loxia curvirostra*) were breeding in the Scotch-fir plantations in his demesne. They first made their appearance in the winter of 1887–88 (Ussher, *Zoologist*, 1888, p. 189), and built a nest in a Scotch fir on the estate in 1889. The nest, with four eggs and both parent birds, was sent to the British Museum (Ussher, *Zoologist*, 1889, p. 180), and many interesting observations upon the habits of the species were recorded. This year they were still more common, and four nests were found; but when I arrived, on the 18th of April, one of them had been robbed by a Magpie. A second nest was inaccessible, but the parent birds were to be seen feeding on the fir-cones. The third nest (with a red male) contained four eggs, and we climbed up to it several times. The birds were extraordinarily tame, and came within two or three feet of us when we were at the nest. The fourth nest (with a yellow male) contained two young birds, able to leave the nest and to climb about on the adjacent branches on the 26th. We caught one of the nestlings, and examined it carefully, but could not detect any sign that the mandibles would be crossed when it arrived at maturity. All four nests were in Scotch firs, one close to a pigstye, and not many yards from a house. Were it not for the Magpies and Hooded Crows it seems probable that the Crossbills might become abundant in this district.

It is very interesting to find so many birds which we are accustomed in England to regard as very rare breeding in such numbers in the south of Ireland; but there is another point of view from which the ornithology of Ireland is equally interesting. Many of our common English birds are conspicuous in Ireland by their absence. Although the country was full of birds, we never once caught sight of a Marsh Tit or a Nuthatch. The Irish distribution of the Parinæ is very remarkable. The Goldcrest (*Regulus cristatus*), the Long-tailed Tit (*Acredula rosea*), the Blue Tit (*Parus cæruleus*), the Great Tit (*Parus major*), the Cole Tit (*Parus ater*), the Creeper (*Certhia familiaris*), and the Wren (*Troglodytes parvulus*) are as common in Ireland as they are in England;

The Firecrest (*Regulus ignicapillus*), the Bearded Tit (*Panurus biarmicus*), and the Crested Tit (*Parus cristatus*), are so very local in England and Scotland that their absence from Ireland is not very surprising; but that the Marsh Tit (*Parus palustris*) should be very rare in the north and east of Ireland, and not be known at all in the south and west, and that the Nuthatch (*Sitta cæsia*) should be absolutely unknown in Ireland, is most extraordinary. Both the last-mentioned species belong to circumpolar genera, one might even say circumpolar subgenera, both are found with very slight modifications all across the Palearctic Region to Japan, and both are represented by closely allied species in the Nearctic Region. That such widely spread species should be absent, or nearly so, from Ireland is a most significant fact. Ireland is most admirably adapted for woodland birds of this kind, and their absence can only be accounted for by the hypothesis that some great catastrophe, such as a glacial epoch, drove them from the island, and that they have not yet found their way back again. The Marsh Tit and the Nuthatch are both as common in Northern Europe up to the Arctic Circle as they are in England, but curiously enough they are almost as rare in Scotland as they are in Ireland. These and many other species to be hereafter mentioned have evidently migrated to the east of England from the continent, whence they have slowly extended their range northwards to Scotland, whence, at a still later date, they have migrated southwards across the North Channel into Ireland. If these hypotheses be true, the following facts ought to be observable:—Firstly, we should expect to find that species which are common in England, but are absent or rare in Ireland, are also absent or rare in Scotland. Secondly, we should expect to find that species which have advanced a stage further in the extension of their range and have reached Scotland in some numbers, but are still rare or local in Ireland, are most abundant in the north-west of that country, in those districts which lie nearest to Scotland. Most of our information respecting the distribution of birds in Ireland supports both these assumptions in a remarkable manner. The Nuthatch is so rare in

Scotland that its occurrence in that country is recorded as a remarkable event, whilst the Marsh Tit is only known in Ireland in that half of the country which lies nearest to Scotland.

The Stock Dove (*Columba ænas*) is another case in point. It is absolutely unknown in the south and west of Ireland, but occurs sparingly in the counties nearest to Scotland.

The Tawny Owl (*Syrnium aluco*) is common in England, but is said only recently to have become so in Scotland, so recently, indeed, that it has not yet reached Ireland. On the other hand, the Barn Owl (*Strix flammea*) and the Long-eared Owl (*Asio otus*) are equally common in the three kingdoms.

The relative distribution of the Carrion Crow (*Corvus corone*) and the Hooded Crow (*Corvus cornix*) is slightly exceptional. The latter species is scarcely known as a breeding-species in continental Europe west of the valley of the Elbe. Hence we may reasonably assume that the British Islands received their Hooded Crows from Scandinavia, whence they have established themselves as common residents in Scotland and Ireland, but not to any extent in England. The Carrion Crow, on the other hand, arrived from the south, and has spread over England and Scotland, but is almost unknown in Ireland.

The Green Woodpecker (*Gecinus viridis*) has a very restricted range. It is not known to have occurred outside Europe, and though it is so common in England it can only be regarded as a rare accidental visitor to Ireland and Scotland. The Little Spotted Woodpecker (*Dendrocopus minor*) and the Great Spotted Woodpecker (*Dendrocopus major*), on the other hand, have very wide ranges, extending across Europe to Japan. They are both common, if local, in England, but very rare in Scotland and Ireland.

The Hawfinch (*Coccothraustes vulgaris*) and the Cirl Bunting (*Emberiza cirlus*) are also common, if local, in England, but almost unknown in Scotland and Ireland.

Hitherto we have spoken only of resident birds, but somewhat similar conclusions may be arrived at by the considera-

tion of migratory birds, though more allowance ought to be made for them. It is scarcely to be expected that they should cross two arms of the sea twice a year, unless the reasons which induce them to enlarge the area of their distribution be very imperative.

When we consider that such birds as the Icterine Warbler (*Hypolais icterina*), the Great Sedge Warbler (*Acrocephalus turdoides*), the Black Redstart (*Ruticilla titys*), the White-spotted Bluethroat (*Cyanecula wolffi*), the Crested Lark (*Alauda cristata*), and some others breed in great numbers in Holland, but object to cross the Channel to visit England, we can scarcely wonder that a second channel should prove a bar to the further migration of allied species. The Nightingale (*Daulias luscinia*) is as unknown in Ireland as it is in Scotland. The Whinchat (*Pratincola rubetra*), the Redstart (*Ruticilla phæniceus*), the Garden Warbler (*Sylvia hortensis*), the Wood Warbler (*Phylloscopus sibilatrix*), the Yellow Wagtail (*Motacilla raii*), and the Tree Pipit (*Anthus trivialis*) are common summer visitors to England, and more or less common, though local, in Scotland, but very rare in Ireland. The Reed Warbler (*Acrocephalus streperus*) and the Lesser Whitethroat (*Sylvia curruca*) are very doubtfully recorded from Ireland, though they are common, if local, in England and in many parts of Scotland.

The Wryneck (*Iynx torquilla*) is common in many parts of England, but rare in Scotland, and very rare in Ireland.

The Irish Limicolæ and Gaviæ scarcely differ from those of England and Scotland, but it is worthy of note that the Stone Curlew (*Ædicnemus scolopax*) and the Kentish Plover (*Egialitis cantiana*) have not been known to breed in either Scotland or Ireland, though both are regular summer visitors to the south of England; and that the Dottrel (*Eudromias morinellus*) and the Red-necked Phalarope (*Phalaropus hyperboreus*), though they both visit Scotland in summer, have not been known to breed in Ireland.

There seems to be an important difference of distribution between the migratory and the resident birds of the British Islands. If a resident English bird does not range as far

north as Scotland, it does not reach the bridge which connects Ireland with Great Britain, and consequently it does not range as far west as Ireland. On the other hand, a migratory English bird may range as far north as Scotland without ranging as far west as Ireland. Though the North Channel appears to be the route across which most resident birds in Ireland have originally emigrated from Great Britain, it does not appear to be an important line of annual migration. This generalization from the known facts of distribution is remarkably supported by the observed facts of migration. Summer migrants to Ireland appear to cross over from Wales to the coasts of Wicklow and Wexford. "A marked migratory movement might be expected in our north-eastern counties between Scotland and Ireland, where the Channel is narrowest; but we have no evidence that such is the case. The bulk of the migrants arrive on the southern half of the east coast of Ireland and on the easternmost of our southern counties; in other words, along the shore extending from Dublin to Waterford" (More and Barrington, Report on the Migration of Birds, ii. p. 126).

Mr. Ussher was kind enough to get me a nestling Heron (*Ardea cinerea*), which obliges me to modify some of the diagnoses in my Classification of Birds.

The pterylosis of the nestling Heron a few days old very closely resembles that of the adult, except that the feathers are replaced by down. The spinal bare tract reaches from the nape almost to the oil-gland, and is absolutely naked. The two lateral bare patches on the lower back are also very conspicuous. On the under surface the ventral bare space is well marked from the chin to the vent.

II. GREAT SALTEE ISLAND.

I am indebted to the kindness of John N. White, Esq., of Waterford, for an opportunity of visiting the Great Saltee Island, which is one of the most interesting breeding-places of Sea-fowl which I have ever seen. It lies about four miles due south of Forlorn Point, on the south coast of county Wexford, and about thirteen miles due east of Hook Head,

at the entrance of Waterford Harbour. It is rather more than two hundred acres in extent, and is a pile of granite rocks, which slopes gently down to a shingly coast towards the south-east, but drops more or less precipitously nearly two hundred feet into the sea towards the north-west. There is a farm of about sixty acres on the sunny side of the island, which is cultivated by an Irish family, who are, for the most part, sublimely indifferent to the hundreds of thousands of birds which breed in the cliffs. Outside the farm the island is covered by grass cropped short by sheep and rabbits, and gay with tufts of pink thrift, or variegated with patches, some of them acres in extent, of intensely blue hyacinths, which suggest the former presence of forest, though every trace of a tree-stump, if it ever was there, has disappeared. On the upper portions of the steep side there is plenty of peat between the granite rocks, but lower down the cliffs are bare, with numerous caves and ledges, and in one or two places there is an escarpment which shows a deep deposit of boulder-clay full of angular rocks of all sizes, and resting upon a bed of rounded stones, which is obviously an old coast-line, some fourteen feet above the present high-water mark.

I suppose there must have been at least 60,000 Puffins (*Fratercula arctica*) on the island. The colony was more than two miles long, and many yards in width. In many places the grass on the surface was entirely worn away by the tramping of myriads of red feet, whilst the peat was so honey-combed by the burrows of the birds, that it continually gave way if any attempt was made to walk over it. The Puffins were ridiculously tame, and on one occasion I stood for at least five minutes within six feet of a rock upon which twenty-four of these birds remained in full view. The edge of the cliff was lined with row after row of them, sometimes the sea for acres in extent was thickly sprinkled over with them, and occasionally the air seemed to be full of them flying about in regiments; nevertheless nearly as many more must have been sitting in their burrows, and only took flight when we alarmed them by walking across the colony.

The number of Kittiwakes (*Rissa tridactyla*) was pos-

sibly less, though we fancied that they increased during the three days that we were on the island. They are much later breeders than the Puffins; we saw no eggs, and the birds did not seem to be in a hurry to finish their nests. The colony of Kittiwakes is not so continuous as that of the Puffins; they seldom occupy cliffs that are not perpendicular, but in some places the nests were crowded on every ledge and projecting stone. The Kittiwake is just as noisy as the Puffin is silent.

It is not easy to estimate the numbers of pairs of Guillemots (*Lomvia troile*) or Razorbills (*Alca torda*) which breed upon the Great Saltee Island, but they must amount to many thousands. There are many places on the cliffs where, with or without the help of a rope, you may climb amongst the eggs of both these species of birds and pick out handsome varieties of each. The Guillemot's eggs from the Saltees are quite as varied and as rich in colour as those from the Yorkshire cliffs; and what is very remarkable, when we consider the extraordinary range of variation, there is scarcely an egg to be found in one locality that cannot be matched by an example from the other. Either the birds mix together in their winter quarters, and return indiscriminately to any breeding-ground, irrespective of whether it be or be not their birthplace; or we must assume that all the present variety in the eggs of the Guillemot had been attained before the dispersal of the original colony, and that the present colonies have not been isolated long enough for any new variations to have been developed.

Not only are the same varieties found on the Saltees as are found on the Yorkshire cliffs, but the comparative scarcity of the rarer and more beautiful varieties is about the same. When the birds were frightened off their ledges it was pitiable to see the number of eggs precipitated into the sea, but so early in the season these would be replaced by a second laying.

Three pairs of Great Black-backed Gulls (*Larus marinus*) breed on the island, one on the highest point, and the others on the top of conspicuous promontories. One of the nests

contained three eggs, but the others contained only two eggs each. We left one of the latter, hoping to find a third egg on a future occasion, but when we revisited it the next day the two eggs were gone, and we found the broken shells lying on the rock not far off, probably eaten by one of the smaller species of Gulls, possibly in revenge for a similar act of robbery. It is curious that the Great Black-backed Gull should be so rare. It is the largest and the strongest of the Gulls which breed in the British Islands. It seems to have the pick of the breeding-places, and one would suppose that it had no enemies that it need fear. It seems to stand sullen and proud and solitary amongst the smaller species. Perhaps the reason of its comparative scarcity is to be found in its unsocial habits. It may not yet have learnt the security that is to be found in numbers. The Herring Gull (*Larus argentatus*) is a smaller bird, but it is very gregarious. There were thousands of pairs scattered over the island, some breeding on the level pasture, others on the steep grassy slopes, whilst a few invaded the colonies of Razorbills and made their nests amongst the rocks. The Lesser Black-backed Gull (*Larus fuscus*) was much less numerous, and was principally confined to one valley, which sloped gently down to the top of the cliffs. Most nests of both these species contained three eggs, but we found one nest of the Herring Gull containing four eggs. We took one very handsome clutch of the Lesser Black-backed Gull containing three blue eggs, with scarcely a spot on them. These large Gulls were very noisy whilst we were near their nests.

There are several colonies of Cormorants (*Phalacrocorax carbo*) on the island, one of them on a lofty pile of granite rocks separated from the main island by a narrow channel. Mr. Ussher swam across and climbed up to the colony. Most of the nests contained young birds nearly as big as their parents, and covered all over with sooty-black down. Some of the young birds were very small, and their slaty-black skins were absolutely naked. A dense crowd of Guillemots, each sitting upon its solitary egg, filled up the space between the Cormorant's nests. The top of the rock and

some distance down the sides were white with the droppings of the birds, and dead and decaying fishes dropped by the Cormorants assisted to make the atmosphere unpleasant.

Shags (*Phalacrocorax graculus*) were even more abundant than Cormorants, but they were rarely breeding in colonies, and their nests were seldom exposed to view. They prefer a cave or a ledge under an overhanging rock, and probably no Shag would choose to build its nest in a cave already occupied, if there was an empty one near at hand. They were, however, so numerous on the island, that they had perforce become gregarious, and on some ledges half a dozen nests were to be found. The Shag sits very close, especially if she has young, and requires to be driven off the nest, after she has tried her best to drive you away by snake-like hisses and contortions of the neck.

But perhaps the most interesting bird that breeds on the island is the Manx Shearwater (*Puffinus anglorum*). A hundred visits might be paid to the island by daylight without the presence of these mysterious birds being suspected. As we steamed to the island the weather was fine and the sea calm, but as we returned a stiff sou'-wester was blowing, the spray splashed over the hurricane-deck, and every now and then we caught a glimpse of the mysterious bird skimming over the waves. On the island itself we did not see a trace of them, but inasmuch as Mr. Ussher had met with them on the same day of May a year previously, we heroically devoted some hours of the night to the pursuit of Shearwaters. On the first night we walked across the island between 10 and 11 without success, probably because the moon was bright and the wind cold. We then turned in for a couple of hours, and tried again from 1 to 2. The moon was behind a bank of clouds near the horizon, and several times we heard the distant crow of the Shearwaters, *cuk-cuk-a-oo, cuk-cuk-a-oo*, in various tones, now angry, now plaintive, sometimes seeming to express delight, and sometimes surprise. Possibly the cold wind prevented them from appearing in greater force. About 2 o'clock the day began to dawn, and soon afterwards the Skylark (*Alauda arvensis*) was in full song, and we heard

the loud purr of the Goatsucker (*Caprimulgus europæus*). On the second night we tried from 12 to 1 without success; it was not quite so cold, but the sky was clear and the moon brighter than ever. Sixty miles to the south-east there is a great colony of the Manx Shearwater, breeding on Skomer, off the coast of Pembrokeshire (Barrington, Zoologist, 1888, p. 367).

The most noisy bird on the island is the Oyster-catcher (*Hæmatopus ostralegus*), which was continually pursuing us with loud anxious cries, and I am afraid not without some reason. We took one clutch of four eggs, and several clutches of three were brought in to us by the farm-labourers. There must have been a score or two of these birds on the island, frequently half a dozen could be seen on the rocks from one spot. They breed among the rocks on the high part of the island, on the short grass halfway down, and on the shingle by the sea on the low side of the island. A clutch of four fresh eggs of the Peewit (*Vanellus vulgaris*) was found by one of the labourers, and we frequently heard the cries of the birds.

A pair of Peregrines (*Falco peregrinus*) breed on the island, and we saw one of them, but we had not time to look for their eyrie. Mr. Ussher picked up some bones of a hedgehog which had probably been eaten by the Peregrines, and remembered having found similar bones on a previous visit. The hedgehogs probably live on the island, which seems to have been part of the mainland after the Glacial Epoch, otherwise it is difficult to account for the great deposit of boulder-clay, which has probably been since washed away by the waves, except where the granite foundation upon which it rests is above the sea-level.

Twice we saw small parties of Sheldrake (*Tadorna cornuta*) fly across the island. They may breed in some of the rabbit-burrows on the island, or in the sand-hills on the opposite coast of the mainland.

We not unfrequently saw Rock Doves (*Columba livia*) fly out of the caves on the steep side of the island.

The Saltee Islands are visited by many species of Passerine

birds on migration, but very few of them remain to breed. The Skylark has already been mentioned, and both the Meadow Pipit (*Anthus pratensis*) and the Rock Pipit (*Anthus obscurus*) were numerous. A few Wheatears (*Saxicola ænanthe*) frequented the rocks at the north-east corner, and we found the empty nest of a Wren (*Troglodytes parvulus*) on the roof of a cave in which a Shag was breeding. A few Swallows (*Hirundo rustica*) build in the outhouses belonging to the farm; we saw a solitary pair of Hooded Crows (*Corvus cornix*), and Jackdaws (*Corvus monedula*) frequent the cliffs in great numbers. A pair of Pied Wagtails (*Motacilla lugubris*) frequented the farm-yard, but the almost ubiquitous Sparrow was conspicuous by his absence.

There are many other breeding-places of interesting birds within a short distance of the Saltee Islands. Seven miles to the north-west lie the Keragh Islands, where the Common Tern (*Sterna fluvialilis*), the Arctic Tern (*Sterna macrura*), and the Lesser Tern (*Sterna minuta*) breed in some numbers (Ussher, Zoologist, 1886, p. 369). We saw several small colonies of Herring Gulls on the cliffs of the mainland as we steamed up to Waterford. Mr. Ussher showed me some eggs of the Black Guillemot (*Uria grylle*) which had been taken this year on the cliffs of the mainland 30 or 40 miles due west of the Saltees. We frequently saw Gannets (*Sula bassana*) on the wing, but their nearest breeding-ground is more than 150 miles to the west.

The water round the Saltees is as clear as crystal, the birds are ridiculously tame, and though in most places on the steep side of the island the cliffs drop down into deep water, there are many nooks and crannies where you can creep down to so low a level that you are able to watch the habits of the birds with the greatest ease, and see the Guillemots and the other Alcidae plunge beneath the surface; and on a calm day you can trace their progress under water to a considerable depth, their wings labouring as if it were very hard work flying through such a dense medium. Cormorants use their wings under water in the same way; but Ducks keep their wings close to their bodies, and trust entirely to their feet

to urge them forward. It is worth remembering that in these habits the Divers resemble the Cormorants and the Alcidae, whilst the Grebes seem to have had diving lessons from the Ducks.

There can be no doubt that the Puffin, and probably its nearest allies, feed their young in the nest until they are able to fly, exactly as the Petrels do, and consequently that my diagnoses of the Ciconiiformes and Galliformes (Seebohm, Classification of Birds, p. ix) are not absolutely diagnostic. The diagnosis of the Order Gallo-Grallæ on page 36 is easily altered to exclude the Tubinares and Impennes, but the Alternative Scheme, in the Appendix to the Introduction, must, I think, be given up.

XL.—*On the Foot of the Young of Iynx torquilla.*

By Dr. A. GÜNTHER.

IN very young Wrynecks (*Iynx torquilla*), about two days old, in which the yolk has not yet been completely absorbed, I have found a very peculiar modification of the skin covering the heel. The skin of this part is greatly thickened, forming



a. Young Wryneck, about two days old; nat. size.

b. Foot with heel-pad; $\times 2$ nat. size.

a prominent pad, 5 millim. long and half as broad, the surface of which is studded with obtusely conical tubercles, as shown in the accompanying woodcut. These tubercles are the